Day 8-10 Forecasting Experiment at the Weather Prediction Center Hydrometeorological Testbed

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Abstract

Since January 2017, the Weather Prediction Center (WPC) Hydromet Test Bed (HMT) has been conducting a forecast experiment for the Day 8-10 period. On the second and fourth Thursday of each month, WPC-HMT scientists convene with a Climate Prediction Center (CPC) forecaster, Environmental Modeling Center (EMC) developers, scientists from the Alaska Climate Services, and academic partners to test the utility of assorted forecasting tools, and to prepare several prototype forecasts for the Day 8-10 period. Extensive verification of the forecasts prepared in the previous forecasting session are presented at the beginning of each session, as well as verification of forecasts extending over the period of a month, and three month seasonal verification. After discussing verification, a CPC forecaster provides an overview of the global climate system, and the potential influence of the Madden Julian Oscillation (MJO) and other annular modes on the forecast. A variety of dynamical and canonical tools are then evaluated prior to making the forecast. The morning session of the experiments is focused on the continental United States (CONUS), while the afternoon session on Alaska.

The cornerstone component of the Day 8-10 probabilistic forecast products is a blend of models and ensembles (auto blend) prepared prior to the experiment. Experiment participants evaluate the auto blend forecast for temperature and precipitation trends over the day 8-10 period, then construct a forecaster blend of models and ensembles, by adjusting the assigned weights used in the auto blend, and adding or removing specific models from the the new blend. Much of the verification effort is focused on evaluating the the value added to the forecast by the forecaster blend. A new parallel version of the auto blend began running in January 2018, and the verification of this blend will be closely evaluated. A social science component to the experiment was added during Fall 2017 to address the look and feel of any potential future product during this time frame. Preliminary results from assorted surveys and focus group activity will be presented.